

THE ANTS OF BIKINI ATOLL, MARSHALL ISLANDS<sup>1</sup>

(Hymenoptera)

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During July and August, 1947, the writer was a member of the Bikini Scientific Resurvey Staff which made extensive studies of Bikini Atoll. In addition to collecting insects in general, the writer made a special effort to obtain and study representatives of all of the kinds of ants nesting on the islets.

Physical environmental conditions on Bikini Atoll are not particularly conducive to the maintenance and dissemination of ant colonies. The small size of the islets, together with the broad expanses of coral sand, the poor soil of the vegetated areas, and the inundation of many parts during severe storms are not favorable for extensive colonization by ants.

No species was present in any great abundance, either in colonies or in individuals, and ants were not a conspicuous element of the insect population. The ants nested in the soil, in or beneath detritus, in decayed and dry coconuts, and beneath the loose bark of dead trees. Few arboreal nests were found although many of the ants foraged on trees and shrubs. The most abundant and conspicuous component of the ant fauna was *Iridomyrmex anceps* (Roger). This species was taken on all of the well vegetated islets and even on Rokar Island with its scanty vegetation. In general the species of ants found on any one of the vegetated islets were those which also inhabited the other vegetated islets, although the proportions of nests of the different species varied somewhat. Most of the ants of Bikini Atoll are tramp species which have a wide distribution in Micronesia.

The various species and subspecies collected are the following ones the determinations of which have kindly been made by Dr. M. R. Smith:

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1. *ODONTOMACHUS HAEMATODA* (L.)

Rather numerous colonies were found nesting in soil in shaded areas beneath fallen coconut trees and loose stumps on Bikini, Namu, Enyu, and Prayer Islands. Males and females were in some of the nests from mid-July until mid-August. During this period some nests contained only workers and males whereas other nests contained only workers and females. The males took to the air almost immediately after having been exposed and flew away. The females scurried to cover but did not fly. No colony was large; the most populous ones contained only about 50 workers. The workers foraged slowly on the open soil during overcast days and early morning and late evening hours. When disturbed they moved rapidly.

2. *MONOMORIUM DESTRUCTOR* (Jerdon)

Several colonies of these tiny ants were collected from within fallen coconuts on Bikini, Namu, and Enyu islands. Workers and multiple queens were in the nests.

3. *MONOMORIUM FLORICOLA* (Jerdon)

This species was rather well represented on Bikini Island where it nested within the shells of fallen coconuts. It was less common but occupied the same habitat on Enyu, Namu, and Prayer islands.

4. *MONOMORIUM PHARAONIS* (L.)

Only two nests were found and these were in the soil beneath fallen pandanus fruit on Bikini Island.

5. *PHEIDOLE* sp.

Numerous workers of an unidentified species were taken as they were running on shaded soil of Namu Island. Soldiers were not collected and the nest was not found.

6. *TETRAMORIUM SIMILLIMUM* (F. Smith)

Isolated workers were taken on Bikini, Enyu, and Prayer islands but nests were not found.

7. *TAPINOMA MELANOCEPHALUM* (Fabricius)

Numerous workers were collected from trunks of trees on Bikini, Enyu, and Prayer islands.

8. *TAPINOMA* sp.

A single nest of what might possibly be *T. indicum* Forel was found beneath loose bark of a tree on scantily vegetated Rokar Island.

9. *IRIDOMYRMEX ANCEPS* (Roger)

This proved to be the most common ant on the islets. The workers construct in the sandy soil of open areas crater nests with usually a single, large, irregular, basal opening. A few nests with two or three openings were observed. The craters averaged approximately 6 inches in diameter. Colonies were populous and the workers very active. Brood was located in chambers about 7 inches below the nest entrance. Males were in the nests in mid-July. Workers were found running on the soil and up and down tree trunks. Nests were taken on Bikini, Enyu, Namu, Prayer, and Rokar islands.

10. *PARATRECHINA (NYLANDERIA) BOURBONICA* Forel

Isolated workers were taken on Bikini and Enyu islands. They were running on the ground.

11. *PARATRECHINA LONGICORNIS* (Latr.)

Workers were collected from foliage on Bikini, Enyu, Namu, and Prayer islands.

12. *CAMPONOTUS RETICULATUS BEDOTI* Emery

Workers were found running rapidly on tree trunks and limbs on Enyu and Namu islands.

13. *CAMPONOTUS IRRITANS CHLOROTICUS* Emery

Numerous large colonies were observed on Bikini, Enyu, Namu, and Prayer islands. Most of the nests were beneath fallen coconut palms and under rotting stumps in rather open areas with moderate sunshine. Those ants which nested beneath stumps burrowed into the stumps and placed their brood in the burrows. Brood was often found in abundance between the dry fronds of fallen coconut trees. The workers are very aggressive. Males and females were in the nests during July.